Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
Transition from TTY to Real-Time Text Technology	)	CG Docket No. 16-145
	)	
Petition For Rulemaking To Update The Commission's Rules For Access To Support The Transition From TTY To Real-Time Text Technology, And Petition For Waiver Of Rules Requiring Support Of TTY Technology	)	GN Docket No. 15-178

To: The Commission

BRETSA COMMENTS ON T-MOBILE USA, INC. PETITION FOR CLARIFICATION OR, IN THE ALTERNATIVE, RECONSIDERATION

The Boulder Regional Emergency Telephone Service Authority ("BRETSA"),[1] by its attorney, hereby submits it's Comments on the T-Mobile USA, Inc. Petition for Clarification Or, In The Alternative, Reconsideration, filed February 22, 2017 ("Petition"). The Petition seeks clarification or reconsideration of the Commission's December 16, 2016 Report and Order and Further Notice of Proposed Rulemaking in the above-captioned proceeding.[2]

In the Petition, T-Mobile seeks clarification of what it perceives to be a requirement that Originating Service Providers ("OSPs") availing themselves of the waiver of the TTY-compatibility requirement by supplying RTT which is backwards compatible with TTY, provide the RTT-to-TTY transcoding functionality where legacy PSAPs interface with an ESInet. These

[1] BRETSA is a Colorado 9-1-1 Authority which establishes, collects and distributes the Colorado Emergency Telephone Surcharge to fund 9-1-1 service in Boulder County, Colorado.

[2] *Transition from TTY to Real-Time Text Technology*; *Petition for Rulemaking to Update the Commission's Rules for Access to Support the Transition from TTY to Real-Time Text Technology, and Petition for Waiver of Rules Requiring Support of TTY Technology*, FCC No. 16-169, CG Docket No. 16-145 & GN Docket No. 15-178 (rel. Dec. 16, 2016) ("R&O and FNPRM").

situations are likely to occur during a state or regional 9-1-1 system's transition to NG9-1-1, due to the impracticality of transitioning all PSAPs within a state or region to NG9-1-1 at the same time, and where PSAPs lack the resources to complete the transition at and after the time a state or regional ESInet is deployed.[3]

I. Legacy PSAPs Should Be Able To Elect To Receive RTT 911 Calls Via TCC.

While the NENA i3 standard for Legacy PSAP Gateways ("LPGs") currently includes RTT-to-TTY transcoding functionality,[4] BRETSA has been unable to verify whether the specification for interwork between MSRP and TTY has yet been completed.[5] More importantly, BRETSA has been unable to verify the cost of implementing RTT-to-TTY transcoding functionality, or how those costs scale based upon the number of simultaneous RTT sessions which must be transcoded. *However the implementation and scaling of RTT transcoding functionality in or in connection with LPGs and the potential costs to PSAPs is a matter which must be addressed*. PSAP transition to NG9-1-1 can only be frustrated and delayed by (i) any requirement to deploy additional functionality in LPGs, and (ii) imposition of additional costs on those PSAPs which will continue to operate in legacy mode, often due to fiscal constraints.

---

[3] There appears to be some tension between T-Mobile's expectation that responsibility for transcoding between RTT and TTY will shift to the PSAPs, and T-Mobile's concern in its July 11, 2016 Comments herein, at 11-12, that it cannot commit to dedicating the networking resources devoted to the transcoding between TTY and RTT signals "forever," and that failure to adopt a sunset would drive carriers by necessity to use single provider, proprietary technologies to manage the resource load.

[4] NENA: The 9-1-1 Association, Detailed Functional and Interface Specifications for the NENA i3 Solution, §7.2 at 420 (Sep. 10, 2016) (available at: http://c.ymcdn.com/sites/www.nena.org/resource/resmgr/standards/NENA-STA-010.2_i3_Architectu.pdf).

[5] *Id*, §7.2.1.4 at 427.

T-Mobile's July 11. 2016 Comments herein suggest that there is a cost to transcoding between RTT and TTY signals. *See* Footnote 3 above. It's July 25, 2016 Reply Comments herein, at 4-5, T-Mobile also stated:

> Crucially, the record reflects consensus that the RTT-TTY backwards compatibility obligation should be limited to critical calls, such as those to 911 and 711-based relay services.
>
> * * *
>
> Because backwards compatibility requires reservation of a transcoder for every single incoming circuit-switched call to an RTT-enabled device, a requirement to support backwards compatibility for all calls could quickly result in no available transcoders for critical (*e.g.*, emergency) calls. Transcoders are a limited network resource and it is not possible to deploy transcoders in sufficient numbers to accommodate all incoming circuit-switched calls.

Footnotes omitted. If the Originating Service Providers can afford only a limited number of transcoders, the impact of requiring integration of transcoders for simultaneous RTT calls into the LPGs must be assessed.

Consistent with its earlier Comments herein, BRETSA suggests that legacy PSAPs should have the option of receiving RTT 9-1-1 calls (i) "out-of-band," outside extant 9-1-1 and future NG9-1-1 systems, via TCC, and (ii) in block mode if requested by the PSAP.[6] This would allow PSAPs to receive RTT 9-1-1 calls via browser or dedicated line, in block mode if elected by the PSAP. This would also allow the providers to transcode the messages for delivery to the TCCs using existing transcoding resources, which should scale well when applied across all

[6] While SMS text-to-911, which is *only* transmitted in block mode, has not overwhelmed PSAP resources; it would be reckless to assume that character-by-character text messaging with an expectation of a dispatcher reading the message as it arrives, could not have different impacts from SMS. Instructions sent by a PSAP to an RTT caller may be better understood if they are sent in block mode, in logical units. PSAPs may wish to require RTT text be transmitted in block mode during periods of high call volume (calls-for-assistance, including non-voice calls) to facilitate multitasking and prioritization of calls based upon the nature of the emergencies reported. There is also reason to believe that some portion of end users may continue to prefer block mode, for multitasking including carrying on multiple message streams with different correspondents at the same time, and due to the increased danger of real-time texting while engaging in other activities such as driving.

PSAPs rather than to individual PSAPs. That is, each individual legacy PSAP on an ESInet would need to deploy transcoding capacity to meet its own peak RTT call volume. When scaled across all PSAPs, a significantly smaller transcoding capacity would be required because not all PSAPs will simultaneously achieve their peak RTT call volumes.)

This would be an *interim measure* only, using existing providers and systems to the extent possible. It would meet the needs of legacy PSAPs in legacy 9-1-1 systems, and legacy PSAPs on ESInets. Once a PSAP connected to an ESInet became NG9-1-1 compatible and capable of receiving RTT in native IP format, the PSAP would no longer require the services of a TCC to receive RTT calls. While BRETSA does not believe that true SMS texting should be sunset, given BRETSA's understanding that true control-channel based SMS provides superior coverage as compared with session-based text implementations, as discussed below,[7] BRETSA understands NG9-1-1 PSAPs would also be capable of receiving SMS text messages via ESInet.

II. PSAPs Should Be Able To Elect To Receive RTT 911 Calls In Block Mode.

In its the R&O and FNPRM herein, the Commission requested further comment on the features to be included in the "safe harbor" RTT implementation, including "block mode." In its Comments and Reply Comments on the FNPRM, BRETSA not only supported inclusion of block mode in the safe harbor implementation, but that RTT should fail-back to true SMS-based text-to-911 to provide block mode, where (i) RTT or any other session-based (or other) text-messaging service with more limited coverage than SMS text-messaging cannot establish or maintain a connection between a wireless user and provider, (ii) a connection is made with a user of a movable Braille device, (iii) a PSAP is in a call-overflow situation or (iv) needs to send instructions to a text-to-911 caller, or (v) a PSAP has elected to receive RTT messages in SMS

[7] The additional SMS coverage, beyond CMRS voice coverage, has enabled First Responders to effectuate backcountry rescues even prior to the implementation of SMS text-to-911.

block mode form instead of TTY.[8] As discussed above, providing for legacy PSAPs to elect delivery of RTT messages via TCC, including TTY-to-RTT messages, in block mode via SMS text-to-911 would allow PSAPs to receive these messages via browser interface or dedicated digital line (depending upon PSAP CPE capabilities).[9] As also discussed above, legacy PSAPs electing such an option could receive the messages via TCC, just as SMS text-to-911 messages are currently provided to legacy PSAPs, *i.e.*, out-of-band of the legacy or NG9-1-1 system, incurring little or no additional expense and without the RTT-TTY message delivery concerns raised by West Safety Services.[10] The greater the expense required to implement interim measures, such as LPG RTT-to-TTY transcoder functionality, the less money PSAPs and 9-1-1 authorities will have to implement NG9-1-1.

Respectfully submitted,

BOULDER REGIONAL EMERGENCY TELEPHONE SERVICE AUTHORITY

By: 

Joseph P. Benkert

Joseph P. Benkert, P.C.
P.O. Box 620308
Littleton, CO 80162
(303) 948-2200

Its Attorney

March 24, 2017

---

[8] See, *e.g.*, BRETSA March 24, 2017 Reply Comments at 8-9.

[9] BRETSA understands that the majority of PSAPs which have implemented text-to-911 have elected to receive text messages via browser or dedicated line, with a small minority electing to receive them via PSAP TTY interface.

[10] July 11, 2016 Comments of West Safety Services, Inc., at 4-5 (sunsetting of the backward compatibility requirement is necessary "to minimize the impact from *TTY 911 failings on IP based systems*," and "*[t]he slow transmission speed and character conversion troubles associated with gateways between RTT systems and legacy TTYs*." Emphasis added).